Claims

1. A method of producing coloured carrier particles, which comprises
a) dispersing the carrier particels in a solution of a colorant or latent pigment, adding the carrier particles to a solution of a colorant or latent pigment, or adding a latent pigment or a colorant to a dispersion of the carrier particles,
b) precipitating the colorant or latent pigment onto the carrier particles, and
c) in the case of a latent pigment, subsequently converting it to the pigment.

2. A method according to claim 1, wherein, at the same time as the colorant,
a pigment,
SiO_2 or
SiO_2 and a pigment
is/are applied by precipitation.

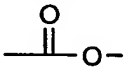
3. A method according to either claim 1 or 2, wherein the carrier particles are selected from metallic, metal oxide, non-metallic and (non-metal) oxide effect pigments, anodised aluminium, polymeric compounds and combinations thereof and organic or inorganic pigments.

4. A method according to claim 3, wherein the carrier particles are selected from metal flakes, such as aluminium flakes of pure aluminium or aluminium alloys, copper flakes and copper alloys, such as copper/tin flakes (bronze), copper/zinc flakes (brass), titanium, silver, zinc, tin, stainless steel (SS) and effect pigments comprising SiO_x ($0.03 \leq x \leq 0.95$), or SiO_x ($0.95 < x \leq 2.0$).

5. A method according to any one of claims 1 to 4, wherein a latent pigment is used which, in Step b), is precipitated onto the substrate by adding a solvent in which it is insoluble.

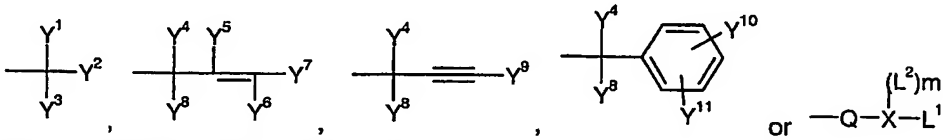
6. A method according to claim 5, wherein the latent pigment has the following formula
$\mathbf{A(B)_x}$ (I), wherein
x is an integer from 1 to 8,
A is the radical of a chromophore of the quinacridone, anthraquinone, perylene, indigo, quinophthalone, indanthrone, isoindolinone, isoindoline, dioxazine, azo, phthalocyanine or diketopyrrolopyrrole series, which is linked to x groups B by one or more hetero

atoms, those hetero atoms being selected from the group consisting of nitrogen, oxygen and sulfur and forming part of the radical A,

B is a group of the formula  , it being possible for the groups B, when x is a number from 2 to 8, to be the same or different, and

L is any desired group suitable for imparting solubility.

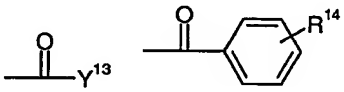
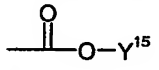
7. A method according to claim 6, wherein L is a group of formula



wherein Y^1, Y^2 and Y^3 are each independently of the others C_1-C_6alkyl,

Y^4 and Y^8 are each independently of the other C_1-C_6alkyl, C_1-C_6alkyl interrupted by oxygen, sulfur or $N(Y^{12})_2$, or unsubstituted or C_1-C_6alkyl-, C_1-C_6alkoxy-, halo-, cyano- or nitro-substituted phenyl or biphenyl,

Y^5, Y^6 and Y^7 are each independently of the others hydrogen or C_1-C_6alkyl,

Y^9 is hydrogen, C_1-C_6alkyl or a group of formula  or  ,

Y^{10} and Y^{11} are each independently of the other hydrogen, C_1-C_6alkyl, C_1-C_6alkoxy, halogen, cyano, nitro, $N(Y^{12})_2$, or unsubstituted or halo-, cyano-, nitro-, C_1-C_6alkyl- or C_1-C_6alkoxy-substituted phenyl,

Y^{12} and Y^{13} are C_1-C_6alkyl, Y^{14} is hydrogen or C_1-C_6alkyl, and Y^{15} is hydrogen, C_1-C_6alkyl, or unsubstituted or C_1-C_6alkyl-substituted phenyl,

Q is p,q-C_2-C_6alkylene unsubstituted or mono- or poly-substituted by C_1-C_6alkoxy, C_1-C_6alkylthio or C_2-C_{12}dialkylamino, wherein p and q are different position numbers,

X is a hetero atom selected from the group consisting of nitrogen, oxygen and sulfur, m being the number 0 when X is oxygen or sulfur and m being the number 1 when X is nitrogen, and

L^1 and L^2 are each independently of the other unsubstituted or mono- or poly-C_1-C_{12}alkoxy-, -C_1-C_{12}alkylthio-, -C_2-C_{24}dialkylamino-, -C_6-C_{12}aryloxy-, -C_6-C_{12}arylthio-, -C_7-C_{24}alkylarylamino- or -C_{12}-C_{24}diarylamino-substituted C_1-C_6alkyl or [-(p',q'-C_2-C_6alkylene)-Z-]$_n$-C_1-C_6alkyl, n being a number from 1 to 1000, p' and q' being different position numbers, each Z independently of any others being a hetero atom

oxygen, sulfur or C_1-C_{12}alkyl-substituted nitrogen, and it being possible for C_2-C_6alkylene in the repeating [–C_2-C_6alkylene–Z–] units to be the same or different,
and L_1 and L_2 may be saturated or unsaturated from once to ten times, may be uninterrupted or interrupted at any locations from 1 to 10 groups selected from the group consisting of -(C=O)- and -C_6H_4-, and may carry no further substituents or from 1 to 10 further substituents selected from the group consisting of halogen, cyano and nitro.

8. A method according to any one of claims 1 to 4, wherein there is used a colorant which is soluble in an alkaline medium and which, in Step b), is precipitated onto the substrate by adding acid and/or a metal salt or wherein there is used a colorant which is soluble in a weakly acid or neutral medium and which, in Step b), is precipitated onto the substrate by adding acid and/or a metal salt.

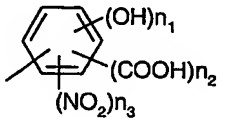
9. A compound of formula

$D(SO_2NHE)_y$ (II) wherein

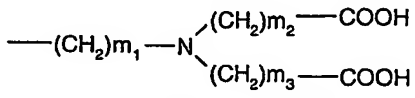
y is an integer from 1 to 8,

D is the radical of a chromophore of the 1-aminoanthraquinone, anthraquinone, anthrapyrimidine, azo, azomethine, benzodifuranone, quinacridone, quinacridone quinone, quinophthalone, diketopyrrolopyrrole, dioxazine, flavanthrone, indanthrone, indigo, isoindoline, isoindolinone, isoviolanthrone, perinone, perylene, phthalocyanine, pyranthrone or thioindigo series, and

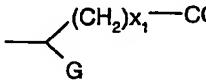
E is selected from the group of the following formulae



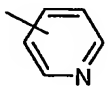
(IIa),



(IIb) and



(IIc) and



IId),

wherein

n_1 and n_2 are each independently of the other 0, 1 or 2, at least one group -OH or -COOH being present, and n_3 is 0 or 1,

m_1 is an integer from 1 to 8,

m_2 and m_3 are each independently of the other an integer from 1 to 8,

G is a group $-NH_2$, -OH, -COOH or $-SO_3H$, and

x_1 is an integer from 0 to 8.

10. A method according to claim 8, wherein the colorant has the following formula

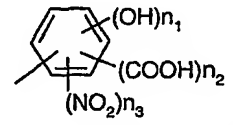
$$\mathbf{D(SO_2NHE)_y}\ (II)$$ wherein

y is an integer from 1 to 8,

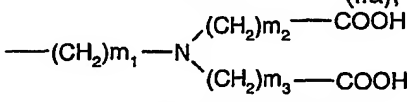
D is the radical of a chromophore of the 1-aminoanthraquinone, anthraquinone, anthrapyrimidine, azo, azomethine, benzodifuranone, quinacridone, quinacridone quinone, quinophthalone, diketopyrrolopyrrole, dioxazine, flavanthrone, indanthrone, indigo, isoindoline, isoindolinone, isoviolanthrone, perinone, perylene, phthalocyanine, pyranthrone or thioindigo series, and

E is any desired group suitable for imparting solubility in an alkaline medium.

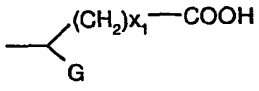
11. A method according to claim 10, wherein E is selected from groups of the following formulae



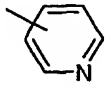
(IIa),



(IIb) and



(IIc) and



(IId),

wherein

n_1 and n_2 are each independently of the other 0, 1 or 2, at least one group -OH or -COOH being present, and n_3 is 0 or 1,

m_1 is an integer from 1 to 8,

m_2 and m_3 are each independently of the other an integer from 1 to 8,

G is a group $-NH_2$, -OH, -COOH or $-SO_3H$, and

x_1 is an integer from 0 to 8, and from compounds of the following formula

$$\mathbf{D(F)_y}\ (III),$$ wherein

y is an integer from 1 to 8,

D is the radical of a chromophore of the 1-aminoanthraquinone, anthraquinone, anthrapyrimidine, azo, azomethine, benzodifuranone, quinacridone, quinacridone quinone, quinophthalone, diketopyrrolopyrrole, dioxazine, flavanthrone, indanthrone, indigo, isoindoline, isoindolinone, isoviolanthrone, perinone, perylene, phthalocyanine, pyranthrone or thioindigo series, and

F is any desired group suitable for imparting solubility in an aqueous medium, such as, for example, -SO_3M or -COOM, wherein M is a cation or hydrogen.

12. Coloured carrier particles obtainable by the method according to any one of claims 1 to 8, 10 and 11.

13. A method of producing coloured carrier particles, which comprises

a) dispersing a pigment in aqueous solution,

b) adding soda waterglass,

c) precipitating SiO_2 and the pigment onto the carrier particles by lowering the pH value.

14. Coloured carrier particles obtainable by the method according to claim 13.

15. Use of the coloured carrier particles according to either claim 12 or claim 14 in colouring textiles, surface-coating compositions, printing inks, plastics, glass, ceramic products or cosmetic preparations or in ink jet printing.